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In-Service Teachers and Computer Mediated Discussions: Ranges and Purposes of Reflection

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The purpose of this qualitative study was to understand discourse types (i.e., factual, prudential, and justificatory) of in-service teachers in the graduate program in literacy education when they engaged in Computer Mediated Discussion (CMD). This study also sought to uncover the kind of support that CMD provided, and to identify their attitudes towards and feelings about such forms of discussion based on their online journal entries and responses to a questionnaire. Fourteen graduate students participated in a weekly reflection for 10 weeks on the readings and on the literacy development of the children they selected for case study. Results indicated that in-service teachers' discourse types differed in quality but not in quantity over time, and that in-service teachers used CMD as a place where they could seek for academic and affective support. Issues about use of CMD were also identified and addressed.

The purpose of this qualitative study was to understand the discourse types (i.e., factual, prudential, and justificatory) of in-service teachers in a graduate literacy education program when they engaged in online discussion concerning literacy assessment issues. The study also sought to uncover the kind of support online discussion provided and to identify these teachers' attitudes towards such forms of discussion. In class discussion, students use factual discourse to describe their observations in the classroom, to seek information, and to make comparisons. Students engage in prudential discourse to make suggestions about or to give advice on pedagogical actions. Justificatory discourse provides reasons and rationales for past, present, or future pedagogical actions and makes critical comments on their readings and observations (Risko, Roskos, & Vukelich, 1999; Zeichner & Liston, 1985).

Background

We adopted Vygotsky's social learning theory to situate our understanding of in-service teachers' learning to assess elementary school children's literacy performance. According to Vygotsky (1960), students' mental development is characterized by the interaction between natural and cultural development. All learning, including graduate students' learning to assess elementary school children's literacy performance occurs first in social contexts. Hence Computer Mediated Discussion (CMD) provides a unique social context for professional development, where in-service teachers can discuss literacy assessment issues with their peers and professors.

Research on Online Discussion

Given Vygotsky's theory (1962), class discussion is an important format that involves teachers in reflecting on, exchanging, and reformulating concepts. It can lead to more desirable active learning (Alvermann, O'Brien, & Dillion, 1990). However, various factors impact on the quality of participation in class discussions. The class size, students' personalities, and limited time allotted for discussions are among factors that professors cannot control in classes. Shy students tend not to speak, and not all class members have equal opportunities to participate in discussions. Lack of participation of some students in class

discussions may limit concept development for these individual students as well as the whole class.

With the development of computer technology, user-friendly e-mail discussion software has provided a means for supplementing classroom discussion, facilitating more student participation, and maximizing the benefits of discussion (Tao & Boulware, 2001). Software such as the Blackboard system allows equal opportunities for participation at an individual's own pace, limits the paralinguistic cues to encourage more active participation, displays and retains messages for repeated scrutiny by a reader/listener, and provides extended time for concept development. Research indicates that Computer Mediated Discussion has produced positive interchanges among students (Wade & Fauske, 2004), opportunities for equal participation (Tao & Reinking, 2000), and time for reflection (Lin & Kinzer, 2003).

When used as a supplement, rather than as a substitute for classroom discussions, CMD may promote students' active learning and critical thinking. In research on learning outcomes, Webb, Jones, Barker, and Schaik (2004) examined the relationship between student participation (i.e., postings and accesses) in CMD and academic learning (i.e., course grades). These researchers found that participation in CMD, whether active or passive, predicted students' academic performance. Students who participated in using CMD by contributing to the discussion forum or those who simply accessed the discussion forum tended to earn higher grades than their non-participating peers. Jeong (2003) investigated the relationship between student interaction and critical thinking in a Master's level course in Business Ethics. Jeong found that students were 10 times more likely to post their responses to positive statements when they were in agreement, but they rarely posted their responses online when they were in disagreement. When responding to opposing viewpoints, students rarely challenged the arguments on the basis of their validity, accuracy, and relevance.

Current research (Li, 2003; Wade & Fauske, 2004) also established that CMD provides students with a safe environment, where they can share feelings and discuss controversial issues. Wade and Fauske (2004) examined the online responses from 19 students who were prospective

secondary school teachers enrolled in a required teacher education course. Students tended to engage other participants in the discussion with different strategies such as expressing agreement, acknowledging others' insights, seeking clarification, and inviting others to challenge their own ideas. Participants generally felt CMD offered a safe environment, where they could ask questions; seek advice; reveal their doubts, fears, and lack of knowledge; and challenge one another when they saw a need. This finding is consistent with the Li study (2003), which found that CMD provided a comfortable environment for teachers to discuss such controversial or sensitive issues as gender, equity, and students' special needs.

Finally, researchers (Gilbert & Babbagh, 2005; Mazzolini & Maddison, 2003) investigated the relationship between (a) structure of online discussions and instructors' roles and (b) student participation in CMD. The Gilbert and Babbagh (2005) study documented that online discussion threads tended to increase when instructors provided guidelines, required even distribution of postings, and increased a grade weight for participation. However, when instructors attempted to limit the length of a posting or to mandate reading citations to be included, students tended to engage in less meaningful discussions. In their study of the roles played by instructors in online discussions, Mazzolini and Maddison (2003) found that instructors who acted as "guides on the side" appeared to be most helpful in facilitating students' meaningful discussions. To be guides on the side, instructors would need to contribute often so as to facilitate but not to dominate the discussion.

Despite an increasing number of studies in the literature on online discussion, there is still a lack of research on using online discussion to engage teachers in reflective thinking. These discussion opportunities may prove particularly beneficial and relevant to in-service teachers in their graduate studies. These teachers bring their own classroom teaching experiences and explicit or hidden theories of literacy learning to the graduate classes. To grow professionally, they need to examine and reflect on their own practices and theories. Computer Mediated Discussion offers a journal-like writing experience that is crucial in teacher reflection and reaches beyond the usual dialogue formed between

professors and graduate students into a multi-logue that may stimulate even further reflection.

Research on Teacher Reflection

Research on teacher reflection has been strongly influenced by John Dewey's early work (1933) and Vygotsky's socio-cultural theory (1960). According to Dewey (1933), reflective thinking is important for a teacher because it leads to intellectual action rather than appetitive, blind, and impulsive action. Reflective teachers have a clear sense of purpose and of the end toward which they are working and are better able to critically evaluate the best approaches to solving instructional problems (Zeichner & Liston, 1996). Schön (1987) observes that uncertainties are valuable learning experience in professional reflective practice. He emphasizes that through reflection, one "can make new sense of the situations of uncertainty or uniqueness" (p. 61). To foster teacher professional development, Zeichner (1996) argues that research on teacher reflection should take into account the social and institutional contexts of teaching and collaborative sharing.

According to several studies (Risko et al., 1999; Zeichner & Liston, 1985), teacher reflective activity can be classified as factual, prudential, and justificatory. This classification of reflective thinking helped researchers investigate the kinds of reflective thinking in which teachers engage (Risko et al., 1999). However, this work overall showed that teachers generally engage low levels of reflective thinking due to a number of factors such as their inconsistent beliefs and values, lack of peer support, and students' negative reactions to their teaching. Gwyn-Payette and Tochon (2003) examined the reflective thinking of 14 pre-service teachers when they were required to implement cooperative learning in class. They found that pre-service teachers' beliefs about the cooperative learning approach, peer support, and their students' reactions in class determined whether they would experiment with the approach or abandon it.

Current research on teacher reflection has also been informed by critical theories. Some researchers (Milner, 2003; Rousseau & Tate, 2003) examined more sensitive issues like culture and race. This kind of

reflection is necessary because teachers tended to be "colorblind" and were not thoughtful about the poor performance of the minority students they taught (Rousseau & Tate, 2003). Sharp (2003) documented how her own reflection on race and multicultural issues helped her to use English literature to facilitate high school students' understanding of ethnic and cultural diversity. Current research has enhanced our understanding of the importance of cultural issues in teachers' reflective thinking especially when providing professional development for teachers working in inner-city schools.

Research (Romeo & Caron, 1999; Wade & Fauske, 2004) on literacy professors' use of CMD in their classes has documented the application procedures and students' engagement in discussions. However, there is a need for further research to determine the impact of combining technology and teacher reflection, particularly in the field of literacy education where language and technology have always been intricately connected and occupy a prominent position (Bolter, 1991; Lin & Kinzer, 2003). Therefore, a qualitative research was designed to understand the role of CMD in in-service teachers' learning to assess the literacy performance of elementary school students. Specifically, the following questions were posed to guide the study.

1. What are the discourse types used by in-service teachers in talking about their understanding of literacy assessment issues?
2. What kind of support does online discussion provide for in-service teachers in learning to assess the literacy performance of elementary school students?
3. How do in-service teachers feel about CMD when they participate in online discussions?

Methods

Participants

Fourteen in-service teachers in a graduate program in literacy education at a four-year college in a northeastern U.S. city participated in the study. Out of the 14 students, 10 were European Americans; one was African American; one was Asian American; and two were Hispanic

Americans. There were 12 female and two male students, who were all working in elementary school settings. Eleven students had at least two years of teaching experience in public schools. Three students had student teaching experience, although they did not have experience in teaching reading. One of the researchers was the instructor for the class, who participated in, moderated, and monitored the discussions as the situation demanded.

Procedures

The 14 students registered for a three-credit graduate course on literacy assessment of children in the first six years of schooling. This assessment course was a prerequisite for the practicum course in an upcoming semester. Students met with the professor once a week for two hours and 45 minutes to discuss various topics in literacy assessment. Each student was responsible for identifying one child with language difficulties either from his or her class or school for the purpose of evaluating and observing the child's literacy development. At the end of the semester, each student would write a formal case study report regarding the child's strengths and weaknesses in reading and writing. Finally, the student would develop instructional strategies to facilitate the child's literacy development.

In preparation for the weekly class discussion, students were asked to reflect on the assigned class readings and on the literacy development of the children they selected for the case study and to write an online journal entry. Students were expected to participate at their own convenience. Students' final grades were based on the following:

- online discussion (30%)
- case study report (30%)
- group project (10%)
- portfolio assessment (10%), and
- attendance (20%).

Students were encouraged to ask questions, to read each other's journal entries, as well as to respond to each other's questions online. Although students were generally encouraged to be reflective in their online

journals, specific ways of reflection were not the focus of the course. Blackboard, a commercially available course management system, was used for online discussions.

Data Sources

Students' electronic journal entries were collected and archived. Altogether 10 online reflections for each student were collected as they engaged in online discussion. For the 11th journal entry, students were asked to respond to 9 questions about the use of CMD (see the Appendix for the questions). Questions were open-ended and asked students to explain why they responded in certain ways (e.g., How do you like to use the Blackboard system's discussion function as a supplement to the class meetings? Why or why not?). The questionnaire was given to students at the end of the semester. The instructor also kept a journal to reflect on his observations of the students' participation in discussions.

Data Analysis

The analysis of students' online journal entries and their responses to the questionnaire involved interplay of several theoretical approaches. We attempted to classify students' responses into the three discourse types (i.e., factual, prudential, and justificatory) developed by Risko et al. (1999). Following a practice exercised by Risko et al., we categorized the 10-week journal entries into three phrases as the beginning (weeks 1-3), middle (weeks 4-6), and end (weeks 7-10) of the semester. These journal entries were parsed into sentences that were used as the unit of analysis.

Based on the classification of the discourse types, we further examined the identified prudential and justificatory discourse types by taking into account the contexts of these responses (e.g., the assessment course content, in-service teachers' prior teaching experience, and their present work with the child). We focused on these two discourse types because we expected the graduate students to use the assessment procedures and to engage in the critical discussion of issues related to literacy assessment.

We also adopted the data analysis strategy of grounded theory by immersing ourselves in the data and writing up the memos so that theoretical categories could emerge (Glaser & Strauss, 1967). We compared the first three weeks of prudential and justificatory discourse types with the ones that occurred in the later weeks of the semester. The instructor's reflections were reviewed from time to time to consolidate our understanding of in-service teachers' participation patterns. The in-service teachers' responses to the post-study questionnaire were examined to validate the themes we had identified based on the analysis of the journal entries. The second researcher read 20 percent of the journal entries independently to verify the categories that emerged. The inter-rater agreement was 89 percent. The differences were resolved through conferences.

Results and Discussion

One of the questions posted by this study was about the discourse types (i.e., factual, prudential, and justificatory) used by in-service teachers in Computer Mediated Discussion (CMD). We found that in-service teachers' discourse types differed in quality and in the level of depth, although prudential and justificatory discourse types did not increase substantially over time.

Prudential and Justificatory Discourse Types Differed in Quality but not in Quantity

Journal entries during weeks 1-3, 4-6, and 7-10 were analyzed to represent teachers' reflections at the beginning, middle, and end of the semester. We tabulated the frequency of each student's responses by counting the number of sentences during these weeks. Hence in the first 3 weeks of the semester, there were a total of 849 sentences from 14 teachers' journal entries. Of the 849 sentences, 742 (87%) were determined to be factual; 60 (7%) were determined to be prudential; and 47 (6%) were identified as justificatory (see Table 1). The percentage analysis of the discourse types indicated no substantial difference between the beginning of the semester and the two later periods. However, the average number of sentences decreased progressively from

a mean of 283 per week in the beginning to means of 243 in the middle and of 187 at the end of the semester.

Table 1

Summary Results for the Reflections at the Beginning, Middle, and End of the Semester

	Beginning (Week 1-3)	Middle (Week 4-6)	End (Week 7-10)
Factual	742 (87%)	642 (88%)	634 (85%)
Prudential	60 (7%)	52 (7%)	86 (11%)
Justificatory	47 (6%)	35 (5%)	29 (4%)
Average Sentences Per-Week	283	243	187
Total Number of Sentences	849	729	749

To capture the level of in-service teachers' reflection, we conducted an in-depth analysis by connecting the identified prudential and justificatory discourse types with their teaching experience, the course content, and their work with the child. Some unique categories emerged as the course moved to the middle and end of the semester. For the purpose of this paper, we will focus our discussion on those categories that showed the difference (see Table 2).

Prudential discourse: contextual, adaptive, and collaborative. One finding about prudential discourse was that the in-service teachers were more likely to contextualize their pedagogical actions in their work with children in the middle and at the end of the semester. This finding suggests that the pedagogical actions taken by the in-service teachers

after they began working with the children were becoming more adaptive and less rigid. The teachers were more likely to collaborate with their colleagues in school to discuss a given child's case. For example, Tim, a first grade teacher, reflected on the use of running records with his children. In his week 5 journal entry, Tim identified the discrepancies between his initial placement of children in his class for reading and the results of running records. Indicating a need for adjustment, he started to make instructional decisions based on assessment findings.

In the week 7 journal entry, Tim showed concern for one child and tried to use more running records to evaluate his performance so that this one child "[did] not feel isolated." Relying on running records represented a shift for Tim, reflecting that "So I am taking back any negative comments on running records that I have made in the past."

An illustration of prudential discourse that was collaborative was excerpted from Yvette's journal. Yvette, a fifth grade teacher, was following Peter Johnston's advice on collaborating with colleagues in assessment. She informed her co-teacher of her finding about a student named Christine. The co-teacher was surprised that Christine "had such negative feelings about her own reading." (From week 5 journal entry)

Justificatory discourse: attached, probing, and increasingly sophisticated. As the course moved towards the middle and end of the semester, the in-service teachers' justificatory discourse became more and more attached to each child's case, and they attempted to become child advocates. They were increasingly aware of the complexity of the issues as they were probing for the causes of the target children's language difficulties. For example, Tina, a novice teacher, captured the discrepancy between the child's ability to improve and the school authority's decision to place him in the special education program. She began to hypothesize what may have caused this child's difficulty in reading comprehension. She made the following critical comments based on her own observations.

I feel that while I was only with him for a short period of time, he seemed interested in trying and pleased once he succeeded, even if he made an error or two. I don't think this justifies ...

putting him in a special education class if he doesn't improve this marking period. ... He doesn't retain information. Maybe he's not interested in what he read or the information that was given, or maybe it is his comprehension in some ways. (From week 4 journal entry)

Andrea recognized that her understanding of the child's case could not be separated from her own language, concepts, and knowledge. "It's important for me to keep in mind that I bring my own language, concepts and knowledge about language to the interpretation, which influences the analysis." (From week 9 journal entry)

Table 2

Typology of Discourse Types

Discourse	Categories	Examples
Prudential Discourse (weeks 1-10)	Connection-the pedagogical action is connected to another course.	<i>I loved the dialogue journal for Tobin's class, and actually utilize the journal with my class.</i>
	Elaboration-the pedagogical action is discussed with details about intent, ways, and potential issues.	<i>Last year, I taught fifth grade and would do a daily journal. Through these journals, I discovered the various likes and dislikes of my students...a range of topics stretching from reading habits to favorite sports personalities. ... At the end of every quarter I would also have them reflect on their work and was able to see what they learned and what they felt they had trouble with.</i>
	Confirmation-the pedagogical action is confirmed with the expert's opinions.	<i>Johnston discussed the importance of active listening. I often have my students engage in book talks. As they are discussing their books in groups I walk around the room and listen in on each group.</i>

Discourse	Categories	Examples
Prudential Discourse (weeks 4-10)	Contextualizing-the pedagogical action is contextualized in the work with the child or classroom teaching.	<i>Unfortunately, I have also discovered that two of my students were lower than I had believed and needed to be brought down to the lower group.</i>
	Adaptation-the pedagogical action is adapted to cater the child needs.	<i>I do a lot of modeling for my 5th graders in the beginning of the year with think alouds, and I insert mini-lessons on it here and there when I see the need.</i>
	Collaboration-the pedagogical action is suggested to another teacher through collaboration.	<i>When I shared my interview with Christine's classroom teacher, she was surprised that Christine had such negative feelings about her own reading.</i>
Justificatory Discourse (weeks 1-10)	Topics criticized and evaluated-critical comments are made on a. ideologies, b. theories, c. author's writing styles, d. discrepancies between school "reality" and recommended practices and procedures.	<i>Although Johnston has great ideas on how to allow children to choose freely, I'm not sure on how to incorporate this freedom into a curriculum without losing my required lessons.</i>
	Point of view-critical comments tend to be detached and general.	<i>I also feel that the schools should allow other assessments (other than standardized tests) to be used to assess a child.</i>
	Self-disclosure-critical comments on one's own theory and practices.	<i>Before I actually started working with children I was very strict and I thought you had to write the correct way or bad habits would be formed.</i>

Discourse	Categories	Examples
	Rhetorical strategies-criticalists resort to metaphors, sarcasm, and questioning.	<i>They simply want a "paint by numbers" instead of a Picasso.</i>
Justificatory Discourse (weeks 4-10)	<p>Point of view-critical comments tend to be attached to the child's case and the criticalist attempts to be the child's advocate.</p> <p>Hypothesizing-critical comments probe the causes for the child's difficulties.</p> <p>Level of Sophistication-criticalists are increasingly aware of the complexity of the issues, use dialectic view to see the opposite, and hold a balanced views of the both sides.</p>	<p><i>I don't think this justifies ... putting him in a special education class if he doesn't improve this marking period.</i></p> <p><i>He doesn't retain information. Maybe he's not interested in what he read or the information that was given, or maybe it is his comprehension in some ways.</i></p> <p><i>I see portfolios as very hard to implement well. For instance, right now, our school uses portfolios. But, it is basically worthless because the teacher chooses the students' best three pieces of writing, and sends them up with the student to the next grade level. It is a lot of work for the teacher, while the student is basically uninvolved. ... But, I agree with Johnston when he says that the students should manage the portfolios (page 268). ... I may start with the idea on page 267 where Johnston suggests that teachers ask students to compile a collection of things that show themselves as literate people. I love the idea of my making one, too - I already have a ton of ideas going through my head about things I could include!</i></p>

The qualitative analysis of the journals indicated that in-service teachers' discourse types differed in the level of sophistication over time. This difference may be related to the contexts and course content. As the course moved to the fourth week, the in-service teachers began to know more about the children they identified for case study. Working with children provided them with a natural context for reflecting on the assessment and pedagogical issues in more authentic, meaningful, and professional ways. This explanation parallels the notion that teacher reflection should not disregard social and institutional contexts (Zeichner, 1996). The discourse types in these sample teacher reflections appear to be contingent upon course requirements and contexts in which learning tasks occur. Further research is needed to investigate the possibility.

One question may arise as to the impact of online discussion on the discourse types in teacher reflection. Could this also happen in regular classroom discussions? We argued that online discussion may have offered teachers different contexts than the typical graduate class discussion, enabling these in-service teachers to hear multiple voices, to share and revisit ideas, and to respond to issues at a later time (Tao & Boulware, 2001). The positive comments on online discussion from the majority of the teachers in this study point to the positive impact of such discussion on the teachers' discourse types (see Table 3).

Academic Support through Sharing and Appreciation

The second research question of this study probes the kind of support that Computer Mediated Discussion provides for in-service teachers. The following data analysis focused on the roles that CMD played in facilitating teachers' learning, in addressing their affective needs, and in promoting equal opportunities for participation in discussion.

The online journal was a place where teachers could learn from their peers' experiences and from each others' responses. This is particularly true of those teachers who had little or no prior literacy teaching experience. For example, Andrea was a counselor and a private

tutor before she became a graduate student in literacy education. Although she never taught a literacy class per se, the literacy courses and some other academic activities stimulated her thinking. At the beginning, she was trying to absorb the concepts and procedures that were new to her. Her reflections during the first three weeks were mostly at the factual level. She described what she had learned from the other courses and became excited about the things she learned about the literacy assessment. These descriptions and excitement showed her new understanding of literacy assessment issues and her motivation to learn. Andrea took advantage of CMD to interact with other teachers, to reflect on the child with whom she was working, and to raise questions. From the instructor's perspective, CMD made it possible for the researcher to respond to her questions in a timely manner. The following is her interaction with the instructor on the issue about a child who was able to comprehend, but made a lot of errors in oral reading.

Andrea: In the oral literacy assessment, Matt made numerous errors even though his comprehension in four different paragraphs was quite good. Evaluating these errors will be helpful in guiding further strategies to help Matt become a more skilled reader. However, even with the errors, Matt has no problem making meaning and comprehending. How much attention should I pay to the errors he makes?

Instructor: It is interesting to note that Matt responded to the comprehension questions correctly, while he made many errors in oral reading. That is the place where we need to do a lot of analysis of his errors. For example, what kinds of errors he made and how and why the errors occurred. Also, we may need to compare his oral reading performance with his silent reading, to find out whether there is a discrepancy between these two kinds of readings.

As the semester went by, Andrea became more and more observant, reflective, and critical in her journal entries. She made a critical comment on the strengths and limitations of standardized tests and portfolio assessment, "Standardized tests only view the student through a very narrow lens, even if an important one. The tests can only point to where a

student is weak or strong, but can't address how strengths can be used to support weaknesses. The portfolio offers a much wider lens. It can show progress as a continuum and not just a frozen moment in the student's learning life." As the course moved toward the end of the semester, she realized that her understanding and interpretation could not be separated from her own knowledge and concepts. In her response to the question on how she felt about the use of CMD, Andrea commented:

I liked using the Blackboard. I regularly read the journal responses of classmates and found it helpful. It was interesting to read the different meaning everyone constructed from Johnston and the learning records. It was helpful and reassuring at times to read about others' difficulty and frustration with miscue [analysis]. I didn't feel alone. It's a good supplement to class meetings because I could read responses from people who generally don't participate in class discussion but have valuable responses and input.

Two other teachers like Andrea, Tina and Wendy, also had no literacy teaching experience and expressed they had learned much from peers in their final entry.

In contrast, other teachers with years of teaching experience found academic support in a different way. These teachers shared their own experiences with those who were seeking help from their peers. Kristin responded that "I became rather addicted to reading what my classmates had to say about the readings." Tim commented that he saw the online journal as an opportunity to help others. He stated, "I would like to think that my participation in the class discussions and postings helped others see that there are different views to teaching. I would also like to think that I was able to help others by asking similar questions to the questions that they have and were afraid to ask or the questions that they did not realize they had."

Seeking Affective Support

Computer Mediated Discussions served as a place where teachers could have their voices heard and seek affective support. Tina felt strongly about her own voice being heard. "Although I may not be a loud

voice in the classroom, I am an active voice.” Kristin admitted that she was relatively quiet and reserved in the class discussion; however, “...it [online discussion] allows more shy or reserved people to have a voice.”

Teachers’ responses around learning Miscue Analysis offered insight into how CMD could provide affective support. During the three-week period, most teachers experienced difficulty and frustration about learning the advanced version of Miscue Analysis, the one for reading specialists and researchers (Goodman, Watson, & Burke, 1987). The following were some teachers’ comments. Luis ‘moaned’ in his journal that “[Miscue Analysis] is a lengthy and arduous task.” Kristin also felt frustrated with Miscue Analysis, “I am a little confused by some of what I am reading on how to administer the RMI, but I know, as with all of the other assessments, it comes with time and practice. ... Also, a lot of my classmates are bringing up the idea of time constraints.”

The instructor saw the need to provide some timely support and reflected: “As I was reading the teachers’ responses, I realized that teachers needed some support from me to guide them through this uncharted water of learning Miscue Analysis. Thanks to the flexibility of the electronic discussion forums, I was able to address different needs in a timely manner.”

Tina was throwing her hands up and felt really frustrated, but she raised some very good questions.

Tina: As I read about the purposes of Miscue Analysis, a question came to mind "How does a student self-correct if he doesn't realize he made a mistake in the first place?" He [the child Tina was working with for the case study] reads right through the sentence regardless if it makes sense or not and [does] not give it a second thought. He doesn't seem to realize or pay enough attention to it. How can I correct that or at least make him aware of it? ... I had no idea teaching was this difficult.

Instructor: You have raised many good questions. For example, you have asked “How does a student self-correct if he doesn't realize he made a mistake in the first place?” ... you are not the only one

who has experienced difficulty and the challenge in learning this assessment procedure. ...

The previous examples indicated that online discussion provided the opportunity for the instructor to interact with teachers by responding to their journal entries and addressing their needs in a timely manner, particularly to those teachers who did not have prior literacy teaching experience. The instructor's response could be a question, a comment on their response, or an encouragement, or simply a reassurance. Obviously, the instructor's participation helped these teachers to reflect on the issues, alleviated their affective concerns, and facilitated learning Miscue Analysis.

Sometimes, however, this kind of sharing might lead the discussion in a very different direction and negatively affect the atmosphere of the learning community. For example, Michelle became frustrated when she had difficulty learning the Miscue Analysis. She expressed her frustration online that Miscue Analysis "is overwhelming and seems unrealistic to use it as a frequent assessment in the classroom." The instructor seized the moment to provide support via timely clarification: "As the instructor of the course, I felt the need to clarify some of the confusion while at the same time addressing their concerns. I responded to Michelle's message, saying that I disagreed with her. I explained what they were expected to do in terms of Miscue Analysis." The instructor also purposefully challenged them to reflect on themselves as teachers and learners.

The teachers' online discussion on Miscue Analysis helped the instructor plan the next week's class meeting. He walked the teachers through procedures step by step to help them see how the patterns (e.g., the child's use of semantic, syntactic, and graphophonic cues) emerged after they painstakingly analyzed each miscue. As a result, most teachers found that learning Miscue Analysis was a hard learning experience, but it was stimulating and rewarding. It helped teachers examine their children's reading difficulties from a different perspective. The result was gratifying. Teachers' confidence in using Miscue Analysis was evident in their journal responses. Michelle reflected in the next week's journal that, "After reading and going to class, I am gaining a greater

understanding of Miscue Analysis. ... I am getting a much better understanding from the activities we do in class.”

In-service teachers’ seeking academic and affective support through CMD indicates the importance of the social nature of learning (Vygotsky, 1962). Zeichner emphasizes the role of collaborative sharing in helping teachers develop professionally (1996). The uncertainties, complexities, and difficulties of learning certain assessment procedures such as Miscue Analysis and of understanding and interpreting the results provide learning opportunities for the teachers to interact with each other online (Schön, 1983).

Computer Mediated Discussion creates a unique social setting. Instructors can provide timely scaffolding to support student learning, and students can learn from each other’s ideas. However, the advantages of electronic space and time for discussion should not be taken for granted. The instructor has to visit online Blackboard on a regular basis and be skillful in addressing teachers’ needs. He or she needs to decide what role he or she should play, when to step aside, when and how to intervene or interrupt a potentially destructive prejudice expressed in a student’s journal, and when and how to clarify a confusion, and how to encourage a student to develop an opinion and come to a critical realization (Fendler, 2003; Mazzolini & Maddison, 2003).

In-service Teachers’ Feelings about the Use of CMD

The third research question sought to explore in-service teachers’ feelings about online discussion through the use of a questionnaire (see Appendix). Nine out of the 14 teachers had no prior experience in using online discussion. Ten out of the 14 teachers reported feeling positive about their experience with online discussion. They gained a rewarding experience by reading other teachers’ journal entries and responses (see Table 3). This kind of learning experience is ongoing, timely, and dynamic. Three of the four teachers whose participation was limited reported specific difficulties in being engaged in online discussion, such as losing the files, lack of experience in using the computer, and having no easy access to the computer. Despite their limited participation, they

supported the continued use of online discussion and valued sharing ideas that were not covered in class.

Table 3

In-service Teachers' Feelings about Online Discussion

Positive Comments	Issues To Be Addressed
<p>Hearing (multiple voices):</p> <ul style="list-style-type: none"> • my own voice • everyone's voice • novice teachers' voice <p>Sharing ideas/input to:</p> <ul style="list-style-type: none"> • overcome difficulties (e.g., Miscue Analysis) • understand content/subject easier • have different perspectives on issues • obtain support from peers for an idea • overcome nervousness • address issues that are not covered in class <p>Making it possible to:</p> <ul style="list-style-type: none"> • bring up an issue at a later time • read and respond to ideas • revisit the topics or ideas 	<ul style="list-style-type: none"> • Need for immediate feedback • No easy access to the computer • Novice computer users • Impersonality • Lack of flow

Our analysis has identified three major areas where online discussion has impacted positively. First, in-service teachers liked to log online to talk with each other because they could hear multiple voices through multi-logue conversations. Online discussion creates a democratic forum where "shy voices" and novice teachers' voices are not repressed by more experienced teachers' voices. Everyone can be engaged in the conversation so that a consensus can be reached, or a controversy can be discussed. Second, online discussion promotes collaborative sharing through which in-service teachers respond to each other to address problems, to understand challenging course content, and

to obtain support from peers for an instructional idea. Finally, online discussion made it possible for in-service teachers to bring up issues at a later time, allowing them to read and respond to an idea at any time, to revisit topics and ideas, and to address issues not covered in class. The technological innovation makes communication easy and efficient, allows equal opportunities for everyone to participate at his or her own pace, and stores and displays messages for repeated scrutiny by the user (Tao & Boulware, 2001; Tao & Reinking, 2000).

The in-service teachers' responses to the questionnaire also indicated some issues around the limitations of using CMD. Three teachers preferred more personal communication for immediate feedback with professors. These teachers felt that online discussion lacked the flow of a conversation because it was impersonal. Another three teachers reported difficulty in having access to a computer, which limited their participation in online discussion. There were other issues raised by one or two teachers such as inadequacy of sharing among themselves, concerns about "being professional," and having technical problems. Donna's responses to the questionnaire best characterize some of the concerns related to CMD.

Again, I do not like being limited to the computer. I benefit more from live discussion and spontaneous reaction/responses--with one thought or idea leading to another, etc. To me, a class discussion is a group of people trying to share the same thought process--be on the same page, and learn from one another. I feel this cannot happen over the computer because it is fragmented and does not have a "flow" ...

I have not had the opportunity to fully benefit from my classmates' electronic discussions due to a limited amount of time. I only go on the computer to write my response and then sign off. Maybe I would benefit more if I had a desk job where my computer was on in front of me all the time and I could access things easily, etc. Being a teacher, it is a completely separate task to

consult the computer--let alone read other's comments--that's another completely separate task.

I think the Blackboard has had somewhat of a positive effect on my learning because it is forcing me out of the dark ages and into the new technological world!!

I think the Blackboard should continue to be used--especially if this is the first time ... BUT--one caution--teachers are not at a desk with a computer on, etc. like in an office--so its limitations need to be considered as well.

Donna candidly told the instructor her dislike of the computer, as she explained previously that "I am not a real big computer person so it never really appealed to me." Teachers are afraid of facing "hyperreality" in the world because of lack of experience in using the computer. "Hyperreality is a term used to describe an information society socially saturated with ever-increasing forms of representation: filmic, photographic, electronic, and so on" (Kincheloe & McLaren, 2000, p. 292). This hyperreality of online discussion has provided Donna with a form of communication that differs from a traditional classroom, where people sit face to face to be engaged in the discussion that has a flow with one topic and one person speaking at a time. Online discussion creates new concepts of time and space that might be opportunities for those who know how to take advantage of them, but challenges for teachers who are not so familiar with the technology and who need to develop "viewing competencies."

The issue raised by Donna about access to the computer is a serious one. Computer Mediated Discussion, as a new form of communication, cannot be seen apart from social and institutional contexts where this kind of communication takes place. Donna may not have access to the computer at home. This puts her at a disadvantage as compared to those who have easy access to a computer at home, although she has been reflective and verbal in class discussion. She might have to rely on computers in public institutions such as the local library, the public school where she works, or the college's computer lab. No easy access to

the computer constrains her from being engaged in a meaningful discussion online because she does not have the time to read the responses of others in depth and reflect on them. Through Donna's experience in using the computer, we understand that this new form of communication presented by "hyperreality" not only requires discrete skills such as "viewing competencies," but also "constitutes new social skills and relation of symbolic powers" (Kincheloe & McLaren, 2000, p. 293).

Implications for Teacher Education

One important finding of this study is that discourse types of in-service teachers did not differ in quantity, but in quality over time. This finding suggests that having teaching experience does not lead automatically to an increase of prudential and justificatory discourse types in teachers' reflection (Risko et al., 1999). In contrast, the finding that these discourse types differed in the level of sophistication and depth over time illustrates that discourse types are context dependent, and that to promote reflections that are more prudential and justificatory, meaningful contexts need to be provided.

Second, in-service teachers tended to seek academic and emotional support as they were engaged in Computer Mediated Discussion. This finding supports the importance of creating online collaborative learning communities for school teachers. Beyond the use of CMD, study groups in schools can provide both the emotional and academic support. Teachers generally identify other teachers as their primary sources of assistance and information when they are developing professionally (Gwyn-Payette & Tochon, 2003; Ponticell, Olson, & Charlier, 1995). Teachers naturally seek informal support relationships, where they can share insights and concerns related to their teaching.

Finally, individual differences in terms of computer skills and computer availability affected teacher perception of the value of CMD. Although most teachers had access to computers, still a few had difficulty accessing computers at their convenience and needed repeated assistance in using the technology. As a result, teacher educators need to provide support for teachers to become familiar with technology

application and to schedule flexible hours for access on campus. Though the gap related to computer access is gradually closing, no one can assure that all teachers have access at school, at college, or at home.

Regardless of the many challenges, getting access and learning to use CMD present, we are delighted to observe the overwhelmingly positive perception of and responses to the online discussion experience. As a consequence of this study, not only did the teachers learn to use technology, they were also able to learn much about literacy assessment and instruction through an extended focus on reflective practice. Learning to be reflective teachers will serve this group of teachers and their students well throughout their professional careers.

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References

- Alvermann, D. E., O'Brien, D. G., & Dillion, D. R. (1990). What teachers do when they say they're having discussions of content area reading assignments: A qualitative analysis. *Reading Research Quarterly*, 25, 296-322.
- Dewey, J. (1933). *How we think: A restatement of the relation of reflective thinking to the educative process*. Chicago: Henry Regnery.
- Fendler, L. (2003). Teacher reflection in a hall of mirrors: Historical influences and political reverberations. *Educational Researcher*, 32(3), 16-25.
- Gilbert, P. K., & Dabbagh, N. (2005). How to structure online discussions for meaningful discourse: A case study. *British Journal of Educational Technology*, 36(1), 5-18.
- Glaser, B. G., & Strauss, A. L. (1967). *The discovery of grounded theory: Strategies for qualitative research*. Chicago: Aldine.
- Goodman, Y., Watson, D., & Burke, C. (1987). *Miscue analysis inventory: Alternative procedures*. Richard C. Owen Publishing.
- Gwyn-Paquette, C., & Tochon, F. V. (2003). Preservice teachers reflections on risk-taking: The dynamics of practice and experience

- while experimenting with innovation during student teaching. *Alberta Journal of Educational Research*, 49(2), 163-180.
- Jeong, A. (2003). The sequential analysis of group interaction and critical thinking in online threaded discussion. *American Journal of Distance Education*, 17(1), 25-43.
- Kincheloe, J., & McLaren, P. (2000). Rethinking critical theory and qualitative research. In N. K. Denzin & Y. S. Lincoln (Eds.). *Handbook of qualitative research* (Second edition) (pp. 279-314). Thousand Oaks, CA: Sage Publications, Inc.
- Li, Qing. (2003). Would we teach without technology? A professor's experience of teaching mathematics education incorporating the internet. *Educational Research*, 45(1), 61-77.
- Lin, X., & Kinzer, C. (2003). The importance of technology for make cultural values visible. *Theory into Practice*, 42(3), 234-42.
- Mazzolini, M., & Maddison, S. (2003). Sage, guide or ghost? The effect of instructor intervention on student participation in online discussion forum. *Computer & Education*, 40, 237-253.
- Milner, H. (2003). Teacher reflection and race in cultural context: History, meanings, and methods in teaching. *Theory into Practice*, 42(3), 173-180.
- Ponticell, J. A., Olson, G. E., & Charlier, P. S. (1995). Project MASTER: Peer coaching and collaboration as catalysts for professional growth in urban high schools. In M. J. O'Hair & S. J. Odell (Eds.), *Educating teachers for leadership and change* (pp. 96-116). Thousand Oaks, CA: Corwin Press, Inc.
- Risko, V., Roskos, K., & Vukelich, C. (1999). Making connections: Preservice teachers' reflection processes and strategies. In T. Shanahan & F. Rodriguez-Brown (Eds.), *Fifty-eighth yearbook of the National Reading Conference* (pp. 412-422). Chicago, IL: National Reading Conference.
- Romeo, L., & Caron, T. (1999). Enhancing graduate literacy teaching using electronic dialogue. In T. Shanahan & F.V. Rodriguez-Brown (Eds.), *National Reading Conference Yearbook 48*. (pp. 387-397). Chicago: National Reading Conference.
- Rousseau, C., & Tate, W. (2003). No time like the present: Reflecting on equity in school mathematics. *Theory into Practice*, 42(3), 210-216.
- Schön, D. (1983). *The reflective practitioner*. New York: Basic Books.

- Schön, D. (1987). *Educating the reflective practitioners*. San Francisco, CA: Jossey-Bass.
- Sharp, K. M. (2003). Teacher reflection: A perspective from the trenches. *Theory into Practice*, 42(3), 243-247.
- Tao, L., & Boulware, B. (Spring/Summer 2001). Why e-mail applications in self-contained classrooms are beneficial. *Kentucky Reading Journal*, 15-19.
- Tao, L., & Reinking, D. (2000). Issues in technology: E-mail and literacy education. *Reading and Writing Quarterly: Overcoming Learning Difficulties*, 16, 169-174.
- Wade, S. E., & Fauske, J. R. (2004). Dialogue online: Prospective teachers' discourse strategies in computer-mediated discussions. *Reading Research Quarterly*, 39(2), 134-160.
- Webb, E., Jones, A., Barker, P., & van Schaik, P. (2003). Using e-learning dialogue in higher education. *Innovations in Education and Teaching International*, 41(1), 93-103.
- Vygotsky, L. S. (1960). The development of high mental functions. In A. Leontiev, A. Luria, and Smirnov (Eds.), *Psychological Research in the USSR*, Vol. I, pp. 11-46. Progress Publishing.
- Vygotsky, L. S. (1962). *Thought and language*. Cambridge, MA: Massachusetts Institute of Technology Press.
- Zeichner, K. (1996). Teacher as reflective practitioners and the democratization of school reform. In K. Zeichner, S. Melnick, & M. L. Gomez (Eds.), *Currents of reform in preservice teacher education* (pp. 199-214). New York: Teachers College Press.
- Zeichner, K., & Liston, D. (1985). Varieties of discourse in supervisory conferences. *Teaching and Teacher Education*, 1, 155-174.
- Zeichner, K., & Tabachnick, B. R. (1981). Are the effects of university teacher education washed out by school experiences? *Journal of Teacher Education*, 32, 7-11.

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Appendix

Online Interview Questions

1. How do you value your peers' input in regular classroom discussions?
2. Do you usually participate actively in classroom discussions? Explain a bit about how you usually participate.
3. Have you ever heard of the Blackboard system or any other systems in managing long distance education?
4. Have you ever used the Blackboard system or any other similar system? If you do, please explain in what circumstances and your general response to its use.
5. How do you like to use the Blackboard system's discussion function as a supplement to the class meetings? Why or why not?
6. How do you value your classmates' input of electronic discussions?
7. What effects does it have (or it has none) on your learning process in this class?
8. How would you evaluate your own participation in the discussions in class and on electronic forum?
9. Any comments on the use of the Blackboard system as a supplement of class discussions.